

AMENDMENT TO THE CLAIMS

This listing replaces all prior versions and listings of claims in the application.

1. (Original) A method for detecting an infection of a mammal with an acid-resistant microorganism, wherein:

(a) a stool sample of the mammal is incubated with (aa) a receptor under conditions permitting a complex formation of an antigen from the acid resistant microorganism with the receptor; or (ab) two different receptors under conditions permitting a complex formation of an antigen from the acid-resistant microorganism with the two receptors and wherein the receptor according to (aa) or the receptors according to (ab) specifically bind(s) an antigen which shows, at least with some mammals, a structure after passage through the intestine that corresponds to the native structure or the structure against which a mammal produces antibodies against after being infected or immunized with the acid-resistant microorganism or an extract or lysate thereof or a protein therefrom or a fragment thereof or a synthetic peptide produces antibodies; and

(b) wherein the formation of at least one antigen-receptor complex according to (a) is detected.

2. (Original) The method according to claim 1, wherein the microorganism is an acid-resistant bacterium.

3. (Original) The method according to claim 2, wherein the acid-resistant bacterium is a bacterium belonging to the genus *Helicobacter*, *Campylobacter* or the genus *Mycobacterium*.

4. (Original) The method according to claim 3, wherein the bacterium is a bacterium of the species *Helicobacter pylori*, *Helicobacter hepaticus*, *Campylobacter jejuni* or *Mycobacterium tuberculosis*.

5. (Currently Amended) The method according to claim 1, wherein the antigen is the antigen of a catalase, a urease or a metalloproteinase, ~~preferably~~ of *H. Pylori*.

6. (Currently Amended) The method according to claim 1, wherein the receptor/the receptors is (are) (an) antibody(ies), ~~(a) fragment(s) or derivative(s) thereof~~ an Fab-, F(ab')₂, Fv, a scFv-fragment thereof, or (an) aptamer(s).

7. (Currently Amended) The method according to ~~of~~ claim 1, wherein for the detection additionally a mixture of receptors is used, wherein the mixture of receptors has the function of catching the antigen if the receptor is used as detector of the antigen, and the mixture has the function of detecting the antigen if the receptor is used as catcher of the antigen.

8. (Original) The method of claim 7, wherein the mixture of receptors is a polyclonal antiserum.

9. (Original) The method according to claim 8, wherein the polyclonal antiserum is obtained against a lysate of the microorganism.

10. (Original) The method according to claim 9, wherein the lysate is a lysate with enriched antigen.

11. (Currently Amended) The method according to claim ~~10~~ 9, wherein the lysate is a lysate with depleted immunodominant antigens.

12. (Currently Amended) The method according to claim 8, wherein the polyclonal antiserum is obtained ~~against~~ by immunization with a purified or a (semi-) synthetically produced antigen.

13. (Original) The method according to claim 12, wherein the antigen is an antigen of a catalase, a urease or a metalloproteinase.

14. (Currently Amended) The method according to claim 1, wherein the receptor and/or the mixture of receptors bind(s) (a) conformation epitope(s).

15. (Withdrawn) The method according to claim 5, wherein the heavy chain of the antibody binding a catalase epitope has at least one of the following CDRs, preferably the CDR3 and still more preferably all of the three following CDRs

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:9 |
| CDR2: | SEQ ID NO.:10 |
| CDR3: | SEQ ID NO.:11 |

16. (Withdrawn) The method according to claim 15, wherein the DNA sequence encoding the heavy chain of the antibody has at least one of the following CDRs, preferably the CDR3 and still more preferably all of the three following CDRs:

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:12 |
| CDR2: | SEQ ID NO.:13 |
| CDR3: | SEQ ID NO.:14 |

17. (Withdrawn) The method according to claim 5, wherein the light chain of the antibody binding a catalase epitope has at least one of the following CDRs, preferably the CDR3 and still more preferably all of the three following CDRs:

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:15 |
| CDR2: | SEQ ID NO.:16 |
| CDR3: | SEQ ID NO.:17 |

18. (Withdrawn) The method according to claim 17, wherein the DNA sequence encoding the light chain of the antibody has at least one of the following CDRs, preferably the CDR3 and still more preferably all of the three following CDRs:

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:18 |
| CDR2: | SEQ ID NO.:19 |
| CDR3: | SEQ ID NO.:20 |

19. (Currently Amended) The method ~~or test~~ according to claim 5, wherein the heavy chain of the antibody binding a catalase epitope exhibits at least one of the ~~following~~ CDRs, ~~preferably the CDR3 and more preferably all three of the~~ following CDRs:

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:21 |
| CDR2: | SEQ ID NO.:22 |
| CDR3: | SEQ ID NO.:23 |

20. (Withdrawn) The method according to claim 19, wherein the DNA sequence encoding the heavy chain of the antibody exhibits at least one of the following CDRs, preferably CDR3 and more preferably all three of the following CDRs:

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:24 |
| CDR2: | SEQ ID NO.:25 |
| CDR3: | SEQ ID NO.:26 |

21. (Previously Presented) The method according to claim 5, wherein the light chain of the antibody binding a catalase epitope exhibits at least one of the ~~following CDRs, preferably CDR3 and more preferably all three of the~~ following CDRs:

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:27 |
| CDR2: | SEQ ID NO.:28 |
| CDR3: | SEQ ID NO.:29 |

22. (Withdrawn) The method according to claim 21, wherein the DNA sequence encoding the light chain of the antibody exhibits at least one of the following CDRs, preferably CDR3 and more preferably all three of the following CDRs:

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:30 |
| CDR2: | SEQ ID NO.:31 |
| CDR3: | SEQ ID NO.:32 |

23. (Withdrawn) The method according to claim 5, wherein the heavy chain of the antibody binding an epitope of the β -urease exhibits at least one of the following CDRs, preferably CDR3

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:33 |
| CDR2: | SEQ ID NO.:34 |
| CDR3: | SEQ ID NO.:35 |
| or: | |

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:36 |
| CDR2: | SEQ ID NO.:37 |
| CDR3: | SEQ ID NO.:38 |

24. (Withdrawn) The method according to claim 23, wherein the DNA sequence of the antibody encoding the heavy chain exhibits at least one of the following CDRs, preferably CDR3 and more preferably all three of the following CDRs:

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:39 |
| CDR2: | SEQ ID NO.:40 |
| CDR3: | SEQ ID NO.:41 |
| or: | |
| CDR1: | SEQ ID NO.:42 |
| CDR2: | SEQ ID NO.:43 |
| CDR3: | SEQ ID NO.:44 |

25. (Withdrawn) The method according to claim 5, wherein the light chain of the antibody binding an epitope of the β -urease exhibits at least one of the following CDRs, preferably CDR3 and more preferably all three of the following CDRs:

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:45 |
| CDR2: | SEQ ID NO.:46 |
| CDR3: | SEQ ID NO.:47 |
| or: | |
| CDR1: | SEQ ID NO.:48 |
| CDR2: | SEQ ID NO.:49 |
| CDR3: | SEQ ID NO.:50 |

26. (Withdrawn) The method according to claim 25, wherein the DNA sequence encoding the light chain of the antibody exhibits at least one of the following CDRs, preferably CDR3 and more preferably all three of the following CDRs:

| | |
|-------|---------------|
| CDR1: | SEQ ID NO.:51 |
| CDR2: | SEQ ID NO.:52 |
| CDR3: | SEQ ID NO.:53 |
| or: | |
| CDR1: | SEQ ID NO.:54 |
| CDR2: | SEQ ID NO.:55 |
| CDR3: | SEQ ID NO.:56 |

27. (Previously Presented) The method according to claim 5, wherein the antibodies in the variable regions of the light and heavy chains have the amino acid sequences shown in SEQ ID NO. 1 and SEQ ID NO. 2, SEQ ID NO. 3 and SEQ ID NO. 4, SEQ ID NO. 5 and SEQ ID NO. 6 or SEQ ID NO. 7 and SEQ ID NO. 8.

28. (Previously Presented) The method according to claim 5, wherein the coding regions of the variable regions of the light and heavy chains have the DNA sequences shown in SEQ ID NO. 1 and SEQ ID NO. 2, SEQ ID NO. 3 and SEQ ID NO. 4, SEQ ID NO. 5 and SEQ ID NO. 6 or SEQ ID NO. 7 and SEQ ID NO. 8.

29. (Currently Amended) The method according to claim 1, wherein the following steps are carried out with the stool sample before incubation with the antibodies:

(a) resuspending the stool sample at a ~~ratio~~ ratio of 1:3 to 1:25, ~~preferably approximately at a ratio of 1:5 to 1:10, particularly preferably 1:5,~~ in resuspension buffer and

(b) mixing on a vortex mixer.

30. (Previously Presented) The method according to claim 1, wherein the detection of the formation of the at least one antigen-receptor complex/antigen-receptor receptor-mixture complex in step (b) takes place by means of an immunological method.

31. (Previously Presented) The method according to claim 1, wherein the detection of the formation of the at least one antigen-receptor complex/antigen receptor-mixture complex in step (b) takes place by means of ELISA, RIA, Western blot or an immunochromatographic method.

32. (Currently Amended) The method according to claim ~~30~~ 31, wherein in said RIA or ~~in~~ said ELISA the same receptor is used for both binding to the solid phase and detecting the epitope.

33. (Previously Presented) The method according to claims 1, wherein the receptor is fixed to a support.

34. (Previously Presented) The method according to claim 1, wherein the receptor is a monoclonal murine antibody.

35. (Currently Amended) The method according to claim 1, wherein the method is a one-step sandwich ELISA.

36. (Currently Amended) The method according to claim 1, wherein the method is a three-step sandwich ELISA.

37. (Original) The method according to claim 33, wherein the material of the support is a porous material.

38. (Previously Presented) The method according to claim 33 , wherein the material of the support is a test strip.

39. (Previously Presented) The method according to claim 33, wherein the material of the support consists of cellulose or a derivative of cellulose.

40. (Cancelled)

41. (Currently Amended) The method according to claim 1, wherein the method is an automated method.

42. (Previously Presented) The method according to claim 1, wherein the mammal is a human.

43. (Withdrawn) A monoclonal antibody, fragment or derivative thereof which has a V region that shows a combination of the CDRs illustrated in any one of claims 15 to 26.

44. (Withdrawn) The monoclonal antibody, fragment or derivative thereof according to claim 43 which has at least one of the V regions shown in SEQ ID NO.:1 and SEQ ID NO.: 2, SEQ ID NO.: 3 and SEQ ID NO.: 4, SEQ ID NO.: 5 and SEQ ID NO.: 6, or SEQ ID NO.: 7 and SEQ ID NO.: 8.

45. (Withdrawn) The monoclonal antibody, fragment or derivative thereof according to claim 44, which is a murine antibody or a fragment or derivative thereof or a chimeric, preferably a humanized antibody or a fragment or derivative thereof.

46. (Withdrawn) An aptamer which specifically binds the same epitope as the monoclonal antibody, the fragment or derivative thereof according to any one of claims 43 to 45.

47. (Withdrawn) An epitope which is specifically bound by the monoclonal antibody, fragment or derivative thereof according to any one of claim 43 or 45 or the aptamer according to claim 46.

48. (Withdrawn) The antibody, fragment or derivative thereof which specifically binds the epitope according to claim 47.

49. (Withdrawn) Diagnostic composition containing at least one receptor as defined in claim 1, optionally fixed to a support material, wherein said diagnostic composition optionally further contains a mixture of receptors as defined in any one of the aforementioned claims, optionally fixed to a support material.

50. (Withdrawn) A test device for the detection of at least one of the epitopes as defined in claim 47 comprising

- (a) at least one receptor as defined in claim 1 fixed to a support material;
- (b) a device for preparing and analyzing stool samples; and optionally
- (c) a mixture of receptors as defined in claim 7.

51. (Withdrawn) A test device for the detection of at least one epitope as defined in any one of the aforementioned claims comprising

(a) at least one receptor as defined in claim 1, wherein the receptor is conjugated with colloidal gold, latex particles or other colouring particles the size of which typically ranges between 5 nm and 100 nm, preferably between 20 nm and 60 nm, particularly preferably between 40 nm and 60 nm (gold) and 200 nm and 500 nm (latex);

53. (Withdrawn) A composition, preferably a pharmaceutical preparation containing at least one of the receptors as defined in claim 1, optionally in combination with a pharmaceutically acceptable support and/or diluent.

54. (Withdrawn) A package containing the diagnostic composition according to claim 49, the test device according to claims 50, 51 or the kit according to claim 52.

55. (New) A method for detecting an infection of a mammal with an acid-resistant microorganism, wherein:

a stool sample of the mammal is incubated with (aa) a receptor under conditions permitting a complex formation of an antigen from the acid resistant microorganism with the receptor; or (ab) two different receptors under conditions permitting a complex formation of an antigen from the acid-resistant microorganism with the two receptors and wherein the receptor according to (aa) or the receptors according to (ab) specifically bind(s) an antigen which shows, at least with some mammals, a structure after passage through the intestine that corresponds to the native structure or the structure against which a mammal produces antibodies against after being infected or immunized with the acid-resistant microorganism or an extract or lysate thereof or a protein therefrom or a fragment thereof or a synthetic peptide produces antibodies, wherein the antigen is an epitope in a catalase, a urease or a metalloproteinase of *H. Pylori* and each said receptor is an antibody, or an Fab, F(ab')₂, Fv or scFv-fragment thereof; and

(b) the formation of at least one antigen-receptor complex according to (a) is detected.